

REMARKS

Applicants have added new claims 46-62. New claims 52-62 correspond to previously cancelled claims 34-44. Claims 1, 3, 4, 9-11, 14-15 and 46-62 are presented for examination.

Claims 1, 3-4, 9-11 and 14-15 are rejected under 35 U.S.C. § 103(a) as obvious over U.S. Patent No. 6,402,796 (Johnson) in view of U.S. Patent No. 5,834,052 (Fukumura). Claim 1, the only independent claim, covers a method of making a battery electrode comprising forming a first layer comprising a cathode mixture on a substrate, removing the substrate from the first layer, and incorporating the first layer into the battery electrode, wherein the cathode mixture is in the form of a slurry.

A *prima facie* case of obviousness has not been established because there is no motivation to combine Johnson and Fukumura. The Examiner has indicated that the motivation to combine the references stems from Fukumura allegedly teaching that "such coating solution slurry also serves as a protective layer. Thus, the cathode material in the form of a slurry acts as a protective feature too." This is an incorrect reading of Fukumura, however. Fukumura discloses a coating solution that is applied over a cathode layer to protect the cathode layer. See col. 6, lines 6-10 and 41-49. This coating solution (protective layer) contains no active material. See col. 4, lines 15-19. The active material referred to is a material for carrying out the electrode reaction. See col. 5, lines 50-52. As such, Fukumura suggests at most the application of a protective coating that is not a cathode mixture, because it lacks active material.

Indeed, the disclosure of the two references, combined with the knowledge of one skilled in the art, would teach against combining the references. Johnson states "it is imperative that the battery which powers [small electronics devices] be made as small as possible in order to provide the greatest volumetric power density. [A] need remains for a method of producing a thin film battery with a greater volume of active material and a *minimal volume of inactive material* in order to achieve a high volumetric power density. It is to the provision of such therefore that the present invention is primarily directed." (Col. 1, lines 23-26 and lines 35-40, emphasis added.) Thus, Johnson teaches away from adding the inactive materials of Fukumura (e.g., acetylene black, carboxymethyl cellulose, Nipol 1820B, and water, col. 6, lines 34-40), as these will

increase the volume of inactive materials in the battery. Therefore, Applicants submit that there is no motivation to combine to references. The rejection should be reconsidered and withdrawn.

In responding to Applicants' past argument that there is no motivation to combine the references, the Examiner appears to have taken the position that a motivation to combine can be found merely from the references being analogous art. *See, e.g.*, page 2, paragraph 2, of the Advisory Action mailed on September 23, 2004. The requirement that the references to be combined must be analogous prior art, i.e., either in the field of applicants' endeavor or reasonably pertinent to the particular problem to be solved (MPEP 2141.01(a)), however, is *separate and additional* from the requirement that some motivation to combine the references be identified in the prior art (MPEP 2142) to make out a *prima facie* case of obviousness. Therefore, because the Examiner has not provided factual evidence that one of skill in the art would have been motivated to combine the references to meet each limitation of the claims, the Examiner has not satisfied the initial burden of establishing a *prima facie* case of obviousness. *See* MPEP 2142. As no case of *prima facie* obviousness has been established, the Applicants are not obligated to provide factual evidence of non-obviousness. *Id.*

As separate and additional grounds for the patentability of the claims, the Examiner has not established a reasonable expectation of success of the combination. The Johnson method sputters lithiated metal oxide that is in the form of a solid target to form a thin film. There is nothing in either Johnson or Fukumura to suggest that such sputter deposition can successfully be employed using a slurry target rather than a solid target, and the Examiner has presented no alternative factual support for the proposition that sputtering a slurry is feasible. Accordingly, Applicants request that the Examiner provide technical support that sputtering a slurry is feasible. Otherwise, for this additional reason, a *prima facie* case of obviousness has not been established.

For at least the above reasons, the rejection of the claims over Johnson in view of Fukumura should be withdrawn.

Claims 1, 3-4, 9-11 and 14-15 are rejected under 35 U.S.C. § 103(a) as obvious over Fukumura in view of Johnson.

The Examiner acknowledges that Fukumura does not disclose removing the substrate. Indeed, the base material cannot be removed, because Fukumura requires the base material sheet to be the current collector, *see* col. 3, lines 55-57. In other words, while in Johnson the support is merely a substrate on which the electrode is deposited, the support of Fukumura is a functional part of the electrode. While Johnson may teach that removal of a substrate which has no active role in a battery cell allows for the production of batteries with greater volumes of active material and minimal volumes of inactive material, *see* col. 1, lines 35-45 of Johnson, Johnson does not teach or suggest that the removal of the current collector is in any way desirable. Indeed, Johnson itself includes a current collector (*see* col. 4, lines 54-62 of Johnson). One of skill in the art would not have been motivated to remove the current collector of the Fukumura electrode sheet, because it would either render Fukumura unsuitable for its intended purpose of being a functional electrode sheet, or it would require the addition of a step to remove the current collector made of the base material and the further addition of a step to add a current collector, needlessly increasing the cost and/or complexity of the method. As such, there is no motivation to combine the references, and the rejection should be withdrawn.

New claims 52-62 correspond to claims 34-44, which had previously been rejected under 35 U.S.C. § 103(a) as obvious over Johnson in view of U.S. Patent Application Publication 2002/0168576 (Hamamoto). That rejection is addressed below.

A *prima facie* case of obviousness has not been established because there has been no showing of motivation to combine Johnson and Hamamoto, and no showing of a reasonable likelihood of success. The Examiner cannot argue that, because Hamamoto teaches certain cathode components can be utilized, motivation to insert these components into Johnson is established; the fact that references *can* be combined is not sufficient to establish *prima facie* obviousness (MPEP 2143.01). As with Fukumura above, there is nothing in either Johnson or Hamamoto to suggest that the sputter deposition of Johnson can successfully be employed using the cathode paste of Hamamoto for a target rather than a solid target, and the Examiner has presented no alternative factual support for the proposition that sputtering a paste is feasible. Again, as with Fukumura above, the disclosure of the two references, combined with the knowledge of one skilled in the art, would teach against combining the references, because Johnson teaches away from adding Hamamoto's conducting aids, solvents and/or binders, as

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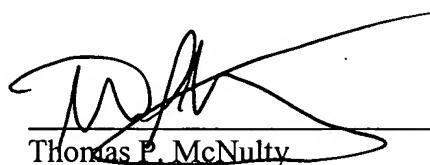
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these will increase the volume of inactive materials in the battery. Therefore, Applicants submit that there is no motivation to combine to references. Claims 52-62 should be allowed over Johnson in view of Hamamoto.

Applicants believe the claims are in condition for allowance, which action is requested. Upon allowance of the pending claims, Applicants request consideration of claims 5-8, 12, 13, 16-21 to additional species, which are written in dependent form or otherwise can be amended to include all the limitations of claim 1.

Please apply any other charges or credits to deposit account 06-1050.

Respectfully submitted,



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